

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0**

I. *APPLICANT:*

Company:

Chalmette Refining, L.L.C.
Post Office Box 1007
Chalmette, Louisiana 70044

Facility:

Chalmette Refining, L.L.C – Chalmette Refinery, Utilities Plant
500 W. St. Bernard Highway, Chalmette, St. Bernard Parish, Louisiana
Approximate UTM coordinates are 792.12 kilometers East and 3341.95 kilometers North, Zone 15

Responsible Official:

Mr. J.A. Stroink, Refinery Manager

II. *FACILITY AND CURRENT PERMIT STATUS*

Chalmette Refinery, L.L.C. (CRLLC) operates an oil refinery in Chalmette, Louisiana, in St. Bernard Parish. St. Bernard Parish is currently designated as attainment for all regulated air pollutants. The Utilities Plant are a major source subject to the Part 70 operating permit program because it is part of a stationary source that has the potential to emit over the major source emissions levels for criteria pollutants. In addition, this stationary source has the potential to emit 25 or more tons per year of aggregate TAPs.

The Chalmette Refinery is bordered by the Mississippi River to the south, Calciner Industries, Inc. and old Kaiser Aluminum Company to the west, St. Bernard Highway with light commercial and residential areas to the north and Palmisano Street with light commercial and residential areas to the east. Chalmette Refinery is a joint venture between ExxonMobil Corporation and Petroleos de Venezuela (PDV), the Venezuelan national oil company. The refinery is an integrated crude operation (high conversion) which includes crude distillation, catalytic reforming, fluid catalytic cracking (FCC), hydrocracking, HF alkylation, delayed coking, and aromatics processing units. The refinery's product capabilities include gasoline, diesel, benzene/toluene/xylene (BTX) production, distillates, and sulfur recovery as well as by-products such as petroleum coke and LPG.

The No. 2 Crude Unit (CR2) processes feed stock into finished products and several by-products that require processing or treatment. After crude enters the unit, water, salt and

Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0

other impurities are removed in the desalters. The crude is then heated and processed in a series of distillation columns. In the columns the feed is separate by boiling point into overhead gases, naphtha, distillates, and residuum.

The No. 2 Coker (CK2) Unit processes residuum into coke and several other by-products that require further processing or treatment. To achieve this goal, the feed is heated in the furnace and put into coke drums where cracking reactions convert the feed into coke and other products that are separated by boiling point in the fractionator. The coke is drilled out of the drums in a batch operation.

The process units that exist at the Chalmette Refinery site include Oil Movements and Loading; Utilities Plant; Waste Water Treatment Plant; No. 1 Crude / Coker; No. 2 Crude / Coker; Cat Feed Hydrotreater / Pretreater No. 1 / Reformer No. 1/ Gasoline Hydrotreater Unit; Sulfur Recovery Unit / HDS / AMU / SWS / WGS / BRU; Flare No.1 & Flare No. 2; Hydrocracker Unit / Pretreater No. 3 / Reformer No. 3 / LEP; Fluidized Catalytic Cracking Unit / Alkylation; and Aromatics.

Timely applications for initial Part 70 Title V permits were submitted by the company, therefore, the facility continues to operate pursuant to 40 CFR 70.7 provided in the Part 70 Title V Program.

This Part 70 operating permit is for the No. 2 Crude/Coker Units which operates under Permit Numbers 2500-00005-02, 2226 (M-3), 2621, and PSD-LA-199 (M-4).

Several state permits remain in effect for this facility until replaced by a Part 70 Permit, these include:

Permit #	Units or Sources	Date Issued
2500-00005-02	No. 2 Crude/Coker Units	11/18/1988
2226(M-3)	No. 2 Crude/Coker Units	11/27/1996
2621	No. 2 Crude/Coker Units	8/10/1999
2916	No. 2 Crude/Coker Units	1/28/2005
PSD-LA-199 M-4	Chalmette Refining – Utilities	10/11/1993

Initial/Modification Title V Part 70 permits that were issued by the department include:

Permit #	Units or Sources	Date Issued
2801-V0	GHU	09/15/2002
2500-00005-V0	Utilities Plant	11/07/2005

Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0

Initial/Renewal/Modification Title V Part 70 permits that are under review by the department include:

Permit #	Units or Sources	Date Issued
2822-V0	Wastewater Treatment Plant	Under Review
3004-V0	Oil Movements & Loading	Under Review
3011-V0	Cat. Fee Hydrotreater Etc.	Under Review

III. *PROPOSED PERMIT / PROJECT INFORMATION*

Proposed Permit

An initial application and Emission Inventory Questionnaire (EIQ), were submitted by Chalmette Refining, L.L.C on October 14, 1996 and an updated application and EIQ were submitted on June 28, 2005 for the No. 2 Crude/Coker Units only.

Project description

The facility proposes the following:

1. Install low NOx burners on No. 2 Crude Gas Oil Heater F-7410 and will maintain the current capacity; replace existing forced and induced draft fans on this heater;
2. Install low NOx burners on No. 2 Coker Heater F-8101 and re-rate heater capacity to meet demands; replace air preheater V-8197 with a larger unit and replace induced and forced draft fans;
3. Install three way catalyst on No. 2 Coker diesel fired air compressor engine;
4. Replace aero assembly and rotor on Wet Gas Compressor K-8101;
5. Replace/Install/Upgrade exchangers and pumps, and make tower modifications;
6. Install a new separator and condenser;
7. Install/Modify fugitive components; and
8. Replace/Upgrade instrumentation.

This renewal/modification permit allows for the following:

- Update emission source estimating methodologies including revised factors and calculation procedures;
- Correct errors in existing permits and update emission source calculations based on current operating levels;
- Delete emissions sources that are no longer in operation or are being grouped differently;
- Update the facility's General Condition XVII and Insignificant Activities List;
- Incorporate previous small source permits, where applicable; and
- Incorporate existing sources not previously permitted.

Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0

Estimated emissions in tons per year are as follows:

Pollutant	Emission**
PM ₁₀	23.14
SO ₂	60.52
NO _x	159.20
CO	136.05
VOC	308.48

** Based on Interim Limits approved by LDEQ in Administrative Order dated 5/25/05

IV. REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

National Emission Standards for Hazardous Air Pollutants: NESHAP From Petroleum Refineries

A petroleum refining process unit that contains or contacts one or more of the HAPs listed in Table 1 of Subpart CC is potentially subject to RMACT. Leaks from equipment in organic HAP service that are located in a petroleum refining process unit are subject to RMACT. Equipment in organic HAP service in the No. 2 Crude/Coker Units is subject to the RMACT. Toxic air pollutant emissions associated with the No. 2 Crude/Coker project will likely endanger human health or the environment, since MACT will be applied to the additional fugitive components proposed as part of the project. Additionally MACT is applied at the facility to all emission sources that emit Class I and II TAPs and also meet the MACT applicability requirements.

Notably, the water discharges will be authorized and regulated in accordance with Chalmette Refining's LPDES permit, which does not require revision to accommodate the No. 2 Crude/Coker Project. The LPDES permit limits currently incorporate Best Practicable Technology (BPT) under the State and Federal Clean Water Acts and comply with all State surface water quality standards. The refinery will comply with its current LPDES permit limit, therefore ensuring that downstream drinking water supply intakes will not be adversely affected.

Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0

Prevention of Significant Deterioration Applicability

This application is a comprehensive update to the initial Part 70 Air Permit Application and does not propose any modifications to the Utilities Plant; thus, PSD/NSR review is not required.

Air Modeling Analysis

No modeling was conducted as a part of this comprehensive update to the initial Part 70 Air Permit Application.

Comprehensive Toxic Air Pollutant Control Program-Chapter 51

Toxic air pollutant emissions from fugitives must be controlled to a degree that constitutes MACT. The Utilities Plant complies with all applicable provisions of the Louisiana Air Toxics Program.

Maximum Achievable Control Technology (MACT) requirements

The Louisiana Air Toxics Program (LA MACT) requires a major source emitting any Class I or II pollutant at a rate that exceeds the minimum emission rate for that pollutant to demonstrate compliance with the Maximum Achievable Control Technology (MACT) standards. Additionally, the Louisiana Air Toxics Program requires a major source emitting any Class I, II, or III toxic air pollutant greater than the minimum emission rate for that pollutant to determine its status of compliance with the applicable ambient air standard (AAS) defined for the pollutant.

The requirements of the LA MACT only apply to the storage tanks, the loading racks, and to the Crude/Coker Units as a whole. This regulation does not apply to the heaters as they combust refinery fuel gas, which meets the definition of a Group 1 virgin fossil fuel in LAC 33:III.5103.A. Per LAC 33:III.5105.B.3.a, emissions from the combustion of Group 1 virgin fossil fuels are exempt from the requirements of LA MACT. Chalmette Refining demonstrates compliance with the LA MACT requirements by complying with the most stringent applicable federal or state air toxics regulations.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0**

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

V. *PERMIT SHIELDS*

A permit shield was not requested.

VI. *PERIODIC MONITORING*

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the proposed permit.

VII. *APPLICABILITY AND EXEMPTIONS OF SELECTED SUBJECT ITEMS*

See Permit.

VIII. *STREAMLINED REQUIREMENTS*

This permit does not include any streamlined requirements.

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0**

IX. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_x) - Compounds whose molecules consists of nitrogen and oxygen.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥10 tons per year of any toxic air pollutant; ≥25 tons of total toxic air pollutants; and ≥100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Chalmette Refining, L.L.C. – No. 2 Crude/Coker Units
Chalmette, St. Bernard Parish, Louisiana
Agency Interest Number: 1376
Activity Number: PER19960005
Draft Permit 2933-V0**

program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

RMACT – Refinery Maximum Achievable Control Technology

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Title V permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.